

REMARKS

Claims 1 – 12 are pending and under consideration.

In the Office Action, Claims 3 – 10 and 12 were allowed, and Claims 1, 2 and 11 were rejected.

Accordingly, Claims 3 – 10 and 12 are allowed and Claim 1, 2 and 11 remain at issue.

I. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 1, 2 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee et al. (“Lee”) (U.S. Patent No. 6,536,873) in view of Shioya et al. (“Shioya”) (U.S. Patent No. 6,260,939). Applicants respectfully traverse this rejection.

Claim 1 is directed to a liquid discharge apparatus for forming pixels composed of a predetermined number of dots disposed in pixel areas on a recording medium according to a liquid discharge signal. The liquid discharge apparatus comprises a head including a plurality of liquid dischargers having nozzles aligned in a predetermined direction, a deflecting unit for deflecting the trajectory of a droplet discharged from one of the liquid dischargers in a predetermined direction and commanding at least two of the liquid dischargers in the vicinity to discharge droplets onto the same pixel area, a storing unit for storing information on a discharge failure of the liquid dischargers, and a controlling unit for controlling the liquid discharge signals sent to the liquid dischargers and the deflecting unit according to the information stored in the storing unit.

In contrast, both Lee and Shioya fail to teach or suggest, singly or in combination, a deflecting unit for deflecting the trajectory of a droplet discharged from one of the liquid dischargers in a predetermined direction and commanding at least two of the liquid dischargers in the vicinity to discharge droplets onto the same pixel area.

Lee states that:

“Thus, it is desirable to redirect droplets from the operable orifice to print at the location that would otherwise be printed by the inoperable orifice. In addition, it has been observed that if each orifice 215 can print ink marks at a plurality of locations on receiver 40, then fewer orifices 215 and associated ink channels 180 are needed, thereby reducing manufacturing costs for print head 30.”

See column 7, lines 11 – 65. Thus, Lee does disclose redirecting droplets from the operable orifice to print at the location that would otherwise be printed by the inoperable orifice, but fails to teach or suggest commanding at least two of the liquid dischargers in the vicinity to discharge droplets onto the same pixel area.

Further Shioya states that:

“FIG. 17 is a block diagram of an ink jet recording apparatus usable with the present invention. It comprises a host computer 201 for supplying the image data to be recorded, a memory (RAM) 202 storing the data concerning the failed nozzles, a controller processor 203 for determining the number of ink droplets to be ejected in accordance with the image data and for selecting the nozzles to be actuated in accordance with the failed nozzle data in the RAM 202. Designated by a reference numeral 204 is an ink jet recording head.”

See column 13, line3s 44 – 54. Thus, Shioya discloses determining the number of ink droplets to be ejected in accordance with the image data and selecting the nozzles to be actuated in accordance with the failed nozzle data in the RAM 202, but fails to teach or suggest commanding at least two of the liquid dischargers in the vicinity to discharge droplets onto the same pixel area.

As such, Claim 1 is patentable over Lee and Shioya, taken singly or in combination with each other.

Claims 2 and 11 recite the same distinguishable feature as that of that of Claim 1. Thus, Claims 2 and 11 are also patentable over Lee in view of Shioya.

II. Conclusion

In view of the above amendments and remarks, Applicant submits that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Dated: Dec 7, 2006

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